

The Knowledge Bank at The Ohio State University
Ohio State Engineer

Title: Back Matter

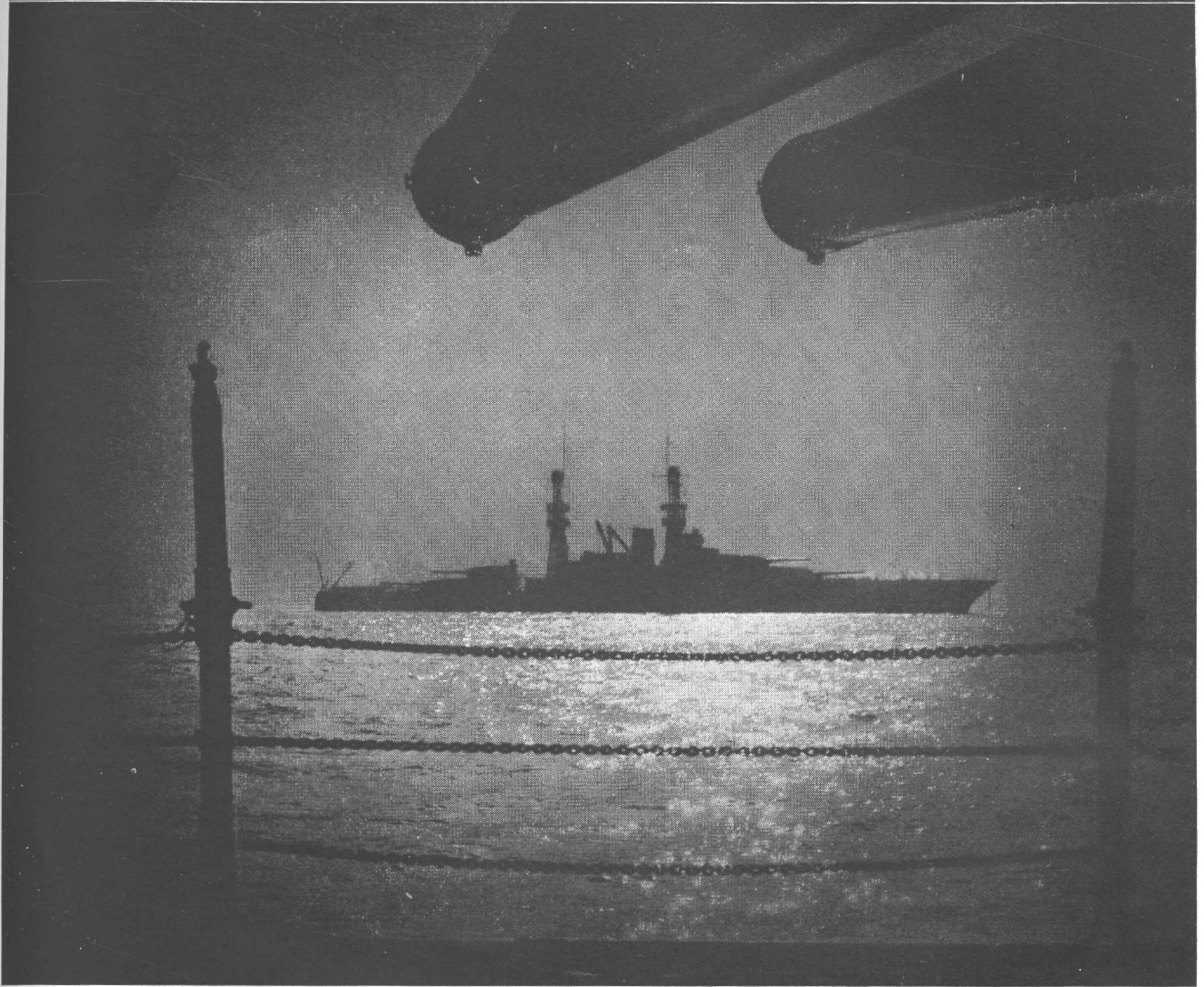
Issue Date: 1942-11

Publisher: Ohio State University, College of Engineering

Citation: Ohio State Engineer, vol. 26, no. 1 (November, 1942).

URI: <http://hdl.handle.net/1811/35876>

Battle wagons have glass ears...



SOMEWHERE on the tough hide of U. S. warships are mounted what look like inverted glass mixing bowls.

These are the radio lead-in insulators, the "ears" through which the battle wagons get their orders. They are made of Pyrex brand electrical glass, as are the insulators in the ships' antenna, because the service requires the best and most dependable materials available.

Today, with metals scarce, the raw materials for glass are fairly plentiful. And glass is being put to work at many urgent tasks. Planes, tanks, ships, trains, for example—all use some contribution of Corning re-

search in glass. The giant dairy industry, faced with a metal piping shortage, is now working with special glass piping recently developed at Corning. In chemical, food, and explosives plants, glass piping and glass pumps are handling everything from soup to HCL.

Years ago glass was regarded as a fragile, decorative, costly material with limited applications. Now Corning makes glassware that has kicked old barriers out the window. It's tough and strong, resistant to chemical attack and thermal shocks, widely varied in shape and size, reasonable in cost, and accurate to toler-



ances comparing favorably with metals. Today's engineers are discovering that they can put glass to practical uses which in the past were labeled, "impossible". For tomorrow's engineers, glass is the material of unlimited possibilities. Industrial Division, Corning Glass Works, Corning, New York.

CORNING
—means—
Research in Glass

F_{INE} **P**_{rinting}

AT . . . HEER'S



COLLEGE Annuals.
School Newspapers, Catalogs, Text
Books, Periodicals and Legal Blanks
are all handled by most skilled crafts-
men who "Plan your work and work
your plan" . . .



The F. J. **HEER**
PRINTING
COMPANY

Printers • Bookbinders • Rulers • Office Supplies

372-386 SOUTH FOURTH STREET
COLUMBUS, OHIO

AD • 4125

Y O U ' L L B U Y A T H E E R ' S B Y E A N D B Y E

You have TWO kinds of Future



The dominant consideration, now, is your immediate future. Many of you are enlisted in the reserve, or are already commissioned. You do have a valuable training which the country needs in this emergency. Make every day count in perfecting that training.

The war you will undoubtedly help to fight is not a nice war. But as we see it, the United Nations intend that it shall have not only a victorious ending, but also a hopeful ending—hopeful in the sense that we shall have a peace in which our goal shall be jobs for all men.

You have a right to know that industry is even now beginning to dream up the where-withal for those jobs—new things to make, and new ways to make old things better.

A lot of everyday sort of men, many of

them very much like yourself, doing this kind of thinking in the past, are the reason Alcoa Aluminum became the leader in the aluminum business. They are the reason Alcoa Aluminum will have such a big part in the future.

Call this kind of thinking Imagineering—letting your imagination soar and then engineering it down to earth. It is perhaps the most important talent a man can have. It is the point of view that industry will always need, and use, to make America a better place to live in.

There is no “pay-off” in this little message. We just wanted to have you know that folks like us can be completely devoted to high-speed war production, and have an eye on a good future for all men, at the same time.

A PARENTHETICAL ASIDE: FROM THE AUTOBIOGRAPHY OF



ALCOA ALUMINUM

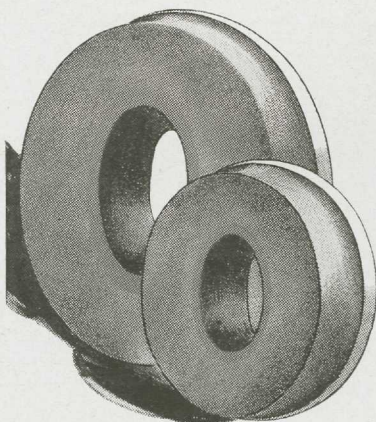
• This message is printed by Aluminum Company of America to help people to understand *what we do* and *what sort of men* make aluminum grow in usefulness.

The giant "Pencil Sharpener" that grinds out projectiles!



Imagine a machine that grinds out 37-mm projectiles almost as easily as you'd sharpen a pencil! Getting the precision of form and finish necessary for accurate shooting was once a much slower procedure. But that was before Carborundum helped develop the wheels for centerless grinding of projectiles. Now the process is simple. First, slice off a piece of cold rolled steel bar stock to exact length with an abrasive cutting off wheel, turn the nose to approximate profile and heat treat to required hardness. Then feed this piece between the specially shaped wheels of a centerless grinder...and...out pops a projectile!

Centerless grinding is performing hundreds of operations in a fraction of the time previously required. And Carborundum has led in developing centerless grinding wheels, which are speeding the output of valves, pistons, shafts, and other products necessary to win the war.



At Carborundum, all our energies are centered on the single objective of helping industry do a better job through the better use of abrasives. When you need information on grinding, our facilities and experiences are at your disposal. The Carborundum Company, Niagara Falls, New York.

Carborundum is a registered trade-mark of and indicates manufacture by The Carborundum Company.



G-E Campus News



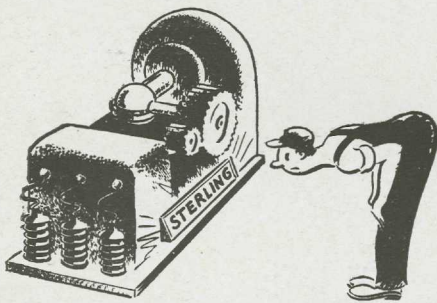
GIRLS, GIRLS, GIRLS

INASMUCH as only one-third of the 12,000 engineers who will graduate in 1943 will be available for private industry, General Electric is hiring young college women to do work formerly done by male engineers.

Forty-four "test women" are on the job now, and others will report each week until the quota (150) is reached. The girls will make computations, chart graphs, and calibrate fine instruments for use in the machine-tool industry.

Miss Virginia Frey (U. of Michigan), one of the 12 women in the country who received engineering degrees this year, is the only graduate engineer in the group. However, each of the others has majored in either mathematics or physics and has received training in both.

Although no one expects these girls to become full-fledged engineers, most of them will be given the Company's famous "test" course.



HI-YO, SILVER!

BROTHER, can you spare a dime?

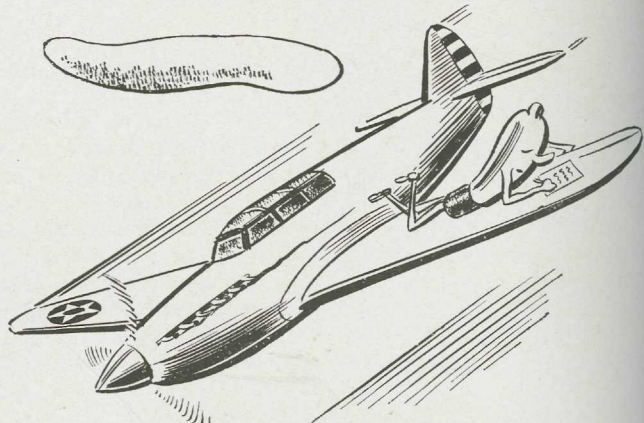
Manufacturers don't really need it yet, but they are using more and more silver as other metals become increasingly difficult to get. G-E engineers, for example, are using silver in the

manufacture of electric apparatus in order to conserve tin, copper, and other scarce materials.

There is now at least a little of the precious metal in almost every motor, generator, transformer, and other piece of equipment built by General Electric for the war.

In many cases the use of silver adds to the cost—a consideration secondary to production at present. Here its use is probably temporary.

But in current-carrying contacts and in brazing alloys, the use of silver results in an improvement in quality sufficient to justify the greater cost. For these purposes, silver will very likely be used in even greater quantities after the war.



TEST PILOT

THE versatile electronic tube has now become somewhat of a test pilot. On test flights, it goes along and writes a complete record of the strains on certain structural parts of the plane as it dives and twists and streaks across the sky.

When a fighter plane goes into a power dive at 500 miles an hour, for example, it has to withstand terrific strains. How great a strain is a vital question to the designer, who wants to know whether he can reduce the weight of the plane to give it greater speed.

Here's how the electronic tube helps furnish the answer to that question: strain gages measure minute changes in dimensions, converting them into tiny electric impulses which electronic tubes amplify sufficiently to drive a highly sensitive oscillograph galvanometer; the galvanometer makes a permanent record of the impulses on a photographic film. *General Electric Company, Schenectady, N. Y.*

GENERAL  **ELECTRIC**